

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Lea Di Cioccio et al.

Confirmation No. 3317

Serial No.: 10/526,657

Art Unit: 2822

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Examiner: Seth W. Barnes

For: METHOD FOR THE PRODUCTION OF A COMPOSITE SiCOI – TYPE
SUBSTRATE COMPRISING AN EPITAXY STAGE

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDED APPEAL BRIEF

Dear Sir:

In response to the Notice of Non-Compliant Appeal Brief dated July 22, 2008, applicants hereby submit an amended Arguments section in which arguments are presented under a separate heading for each group of rejections on appeal. Accordingly, reconsideration of the Appeal Brief is respectfully requested.

The response is timely filed and no fee is believed due for this submission.

ARGUMENTS

Applicants submit that claims 7-11 are patentable over Letertre and Vinod publications at least for the following reasons.

I. Claims Rejections under 35 U.S.C. 102(a) over Letertre publication

Claim 7 recites a method for manufacturing SiCOI substrate, the method comprising, inter alia, “supplying an initial substrate comprising a SiC support bearing a layer of SiO₂ whereon a thin layer of SiC is transferred... and conducting an epitaxy of SiC on the thin layer of SiC at a temperature from 1450°C to 1550°C.”

According to the M.P.E.P., a claim is anticipated under 35 U.S.C. § 102(a) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.¹ Letertre does not disclose all limitation of claim 7.

First, Letertre does not disclose, teach or even suggest SiO₂ as a bonding layer between SiC substrate and the thin layer of SiC. In Introduction on page 151, Letertre mentions that it is known to use oxide layer as a bonding layer between SiC substrate and thin SiC film. The reference, however, does not mention that such oxide layer may be Silicon Oxide (SiO₂) are recited in claim 7 of the present application. Moreover, in next sentence, Letertre proposes a new method for fabricating SiCOI substrate, which does not involve oxide as bonding layer. In contrast, Letertre describes tungsten silicide (WSi₂) as bonding agent of choice, thereby teaching away from the present invention.

¹ Manual of Patent Examining Procedure (MPEP) § 2131. See also *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Furthermore, Leterter fails to describe epitaxy of SiC on the thin layer of SiC [which are bonded using SiO₂] at a temperature from 1450°C to 1550°C. To that end, applicants state at paragraph 15 of the specification the following:

“The corresponding technical literature does not apparently report on research on 6H or 4H polytype SiC epitaxy on SiCOI substrates. This is due to the fact that it is acknowledged that, for temperatures of up to 1350 °C, the quality of 6H and 4H polytype epitaxy will be poor (case of epitaxy on SiCOI with silicon support plate). In addition, over 1400 °C the oxide will be degraded, i.e. destroyed, or recrystallised.”

For this reason, the results obtained by the applicants were unexpected, as reported in paragraph 16 of the specification:

“However, the inventors of the present invention succeeded in carrying out epitaxy on all these different types of materials and unexpectedly obtained several satisfactory results. The oxide was not degraded at high temperatures (1410 °C.-1600 °C.) when the epitaxy was conducted on SiCOI substrates formed from an SiC support successively bearing a silicon oxide layer and a thin SiC layer, making it possible to produce high quality epitaxy, comparable to epitaxy on solid sic. The inventors also conducted 6H and 4H polytype SiC epitaxy on SiCOI substrates wherein the support is made of silicon. Encouraging results were obtained.”

Accordingly, Leterter fails to anticipate claim 7 of the present application: As to dependent claims 8-11, the argument set forth above is equally applicable here, because dependent claim incorporate all limitations of their base claim 7.

II. Claims Rejections under 35 U.S.C. 103(a) over Letertre in view of Vinod publication

Vinod publication also fails to describe the aforementioned limitations of claim 7 and therefore, does not preclude patentability of the present application.

Conclusion

In view of the foregoing, it is respectfully asserted that the claims 7-11 are in condition for allowance. Favorable disposition to the effect is respectfully requested.

Respectfully submitted,



Dated: August 20, 2008

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